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voyages, the hoped-for success of the aeroplane in war and in peace, the development of agriculture, the safety of our vessels, all depend on our knowledge of the atmosphere, and our anticipation of its vagaries.

We have done wonders on land and sea, on the mountains and underneath the oceans, but we have scarcely begun to appreciate what we may do in the atmosphere. We may not change its winds, its rains and snows, but we may learn to utilize them to advantage. The investment of a half million dollars in one laboratory, with its physicists and mathematicians devoted to research in the physics and mechanics of the atmosphere, would do for meteorology as much as the wonderful observatory at Mount Wilson is doing for astronomy.

One hundred years ago James Smithson of England entrusted his fortune to the United States as executor of his will, and from that evidence of his faith in America, innumerable benefits have followed. How long will it be before meteorology receives a corresponding attention?

The state of New York has furnished such men as Myer from Buffalo, Henry from Albany, Redfield from New York—eminent students who died without realizing their fondest hopes. Americans are profiting unconsciously by their labors in meteorology. Will they not invest 1 per cent. of their earnings in the promotion of an institute devoted to man's progress in this important science? They can do nothing better for humanity.

C. ABBE

#### MORE BOTANICAL ERRORS

PROFESSOR NEWCOMBE's communication entitled "Professor Punnett's Error," on page 442 of the present volume of *SCIENCE*, prompts me to call attention to the fact that Punnett is not the only zoological writer who displays ignorance of elementary botanical facts. Two books in common use in our universities exhibit the same error as Mr. Punnett's book. One of these, "The First Principles of Heredity," by Dr. Herbert, contains the following exposition (page 21): "Among plants we find male and female germ-cells in all flowering

species—the former, the pollen-grain, being developed in the anther of the stamen of the flower; the latter, the ovule, lying in the ovary, to which the pistil leads. Most flowers possess both sexual organs, stamen as well as pistil; . . ." It will be sufficient to point out three of the patent misconceptions in this extract: (1) the pollen-grain and ovule are not germ-cells; (2) the stigma or style, not the pistil, leads to the ovary, which is itself part of the pistil; (3) stamen and pistil are not sexual organs, for they bear *asexual* spores. The second work referred to is E. Davenport's "Principles of Breeding." On page 161, speaking of the ovum, the writer says "Its equivalent in plants is the ovule." In the next paragraph the writer says that the spermatozoon is "the functional equivalent of the pollen grain of plants." The errors here involve the same misconception as in the first case, but are less serious.

Botanists of course regret that the term ovary should have been wrongly applied to the sac which contains megasporangia, but the usage seems to be here to stay, and certain of our zoological brethren might well consult a dictionary when dealing with botanical topics.

M. A. CHRYSLER

#### "WASHINGTON SCIENCE"

UNDER the above caption which is assumed to have "depreciatory significance," "Washingtonian" "who has spent nearly half a century in scientific work, under government auspices" writes<sup>1</sup> defending government scientists.

It is with pleasure that I endorse every statement of his article and in many cases I could add much more of commendation from my personal knowledge. It is suggested that "outsiders" can help if they will to promote the ideal service, hence I have attempted to define what "depreciatory significance" the above title might have in my mind and to suggest a remedy.

It seems to me that the difficulty is one of

<sup>1</sup> *SCIENCE*, N. S., XXXIV., 405, September 29, 1911.

coordination, as far as the relation of industrial organizations to government science is concerned, arising from the fact that scientists in the government bureaus often have no adequate knowledge of the industries affected by the regulations which they are called upon to draw up and enforce and hence they are not in a position to properly distinguish between attempts to evade the law and real protests concerning unnecessarily restrictive rulings. Very few business concerns are engaged in anything comparable with the sugar trust frauds or would countenance anything of the kind, yet "Washington scientists" are apparently unduly influenced by such cases and do not appear to give sufficient thought to the thousands of concerns with whom they never have any trouble.

The remedy for this condition would appear to lie in the employment of a number of scientists in the executive work of the bureaus who have had adequate training in the industries affected, in place of the present plan of selecting all scientists for government work from men who have devoted their entire previous time to theoretical study and teaching.

In the ultimate analysis the industries of the country appear to be the financial foundation upon which our government rests, hence I would suggest that inhabitants of the structure occupying "top floor front rooms" should be a little more conservative in their treatment of this same foundation.

INDUSTRIAL ENGINEER

#### THE METHODS OF AMERICAN ETHNOLOGISTS

TO THE EDITOR OF SCIENCE: American students will welcome the views propounded by Dr. Rivers in his presidential address before the Anthropological Section of the British Association for the Advancement of Science (SCIENCE, September 29, 1911). Nevertheless, were Dr. Rivers telescopically gifted, he would assuredly read nothing but amazement and surprise in the expression of American ethnologists' eyes as they peruse his extraordinary characterization of their activity as

compared with that of their colleagues in other lands.

Dr. Rivers's paper is essentially a declaration of independence from the traditional point of view of his compatriots, who, to use his own words, have been "inspired primarily by the idea of evolution founded on a psychology common to mankind as a whole." His own investigations in Melanesia have converted Dr. Rivers to the teachings of the geographical or "ethnological" school, whose home, past and present, he finds in Germany. He has arrived at the conclusion that a direct psychological interpretation of cultural phenomena is impossible, because it ignores the demonstrable blending of different cultures. Psychological analysis, he contends, must be preceded by an ethnological analysis: ". . . if cultures are complex, their analysis is a preliminary step which is necessary if speculations concerning the evolution of human society, its beliefs and practises, are to rest on a firm foundation" (p. 391).

Apparently, Dr. Rivers has never met with any thing like such views in the writings of American ethnologists, for among these he recognizes only either purely descriptive recorders of data concerning the Indians, or writers who, like Kroeber in his "Classificatory Systems of Relationship" and like Goldenweiser in his "Totemism: an Analytical Study," investigate social problems from a purely psychological point of view.

Now, as early as 1895, Dr. Boas was led by his study of mythology to an expression of opinion so closely resembling the recent utterances of Dr. Rivers that it is almost inconceivable how the resemblance could fail to be noticed. At the conclusion of his "Indianische Sagen von der nord-pacifischen Küste Amerikas" (p. 353), Boas emphatically protests against a direct interpretation of myths as expressions of universal ideas before investigating the historical and geographical causes conditioning the growth of mythological tales. A still more comprehensive statement appears in the same writer's "Introduction" to the "Publications of the Jesup North Pacific Expedition" (Vol. I, 1898—